SCHEDULE "C"

Digital Imagery Specifications

Dimensions and Resolution:

All values are approximates based on target height-over-ground. The actual values vary due to elevation changes.

Individual Images:

Premier Community Images

C5 Oblique (Nominal 12 Inch)

Footprint:

Front Line:	3,700 feet (1128 meters)
Back Line:	5,100 feet (1554 meters)
Front to Back:	4,600 feet (1402 meters)

Ground Sample Distance:

Front Line:	0.9 feet/pixel (0.27 meters/pixel)
Middle Line:	1.1 feet/pixel (0.34 meters/pixel)
Back Line:	1.3 feet/pixel (0.40 meters/pixel)

C5 Orthogonal (Nominal 12 Inch)

Footprint:	3,600 x 2,400 feet (1097 x 731 meters)
Ground Sample Distance:	0.9 feet/pixel (0.27 meters/pixel)

Premier Community Images

C3 Oblique (Nominal 12 Inch)

Footprint:

Front Line:	3,100 feet (975 meters)
Back Line:	6,300 feet (1524 meters)
Front to Back:	6,100 feet (1311 meters)

Ground Sample Distance:

Front Line:	1.0 feet/pixel (0.24 meters/pixel)
Middle Line:	1.3 feet/pixel (0.30 meters/pixel)
Back Line:	2.0 feet/pixel (0.38 meters/pixel)

C3 Orthogonal (Nominal 12 Inch)

Footprint:	4,000 x 2,700 feet (1219 x 823 meters)
Ground Sample Distance:	1.0 feet/pixel (0.31 meters/pixel)

Elite Community Images

Oblique (Nominal 8 Inch)

Footprint:

Front Line:	3,000 feet (915 meters)
Back Line:	6,000 feet (1830 meters)
Front to Back:	4,700 feet (1,433 meters)

Ground Sample Distance:

Front Line:	0.8 feet/pixel (0.24 meters/pixel)
Middle Line:	1.0 feet/pixel (0.30 meters/pixel)
Back Line:	1.5 feet/pixel (0.46 meters/pixel)

Orthogonal (Nominal 8 Inch)

Footprint:	2,600 x 1,700 feet (793 x 518 meters)
Ground Sample Distance:	0.6 feet/pixel (0.18 meters/pixel)

Premier Neighborhood Images

Oblique (Nominal 6 Inch)

Footprint:

Front Line:	2,500 feet (762 meters)
Back Line:	4000 feet (1220 meters)
Front to Back:	3400 feet (1037 meters)

Ground Sample Distance:

Front Line:	0.6 feet/pixel (0.18 meters/pixel)
Middle Line:	0.8 feet/pixel (0.24 meters/pixel)
Back Line:	1.0 feet/pixel (0.30 meters/pixel)

Orthogonal (Nominal 6 Inch)

Footprint:	2,000 x 1,330 feet (610 x 405 meters)
Ground Sample Distance:	0.5 feet/pixel (0.15 meters/pixel)

Elite Neighborhood Images

Oblique (Nominal 4 Inch)

Footprint:

Front Line:	1,400 feet (427 meters)
Back Line:	2,000 feet (610 meters)
Front to Back:	1,800 feet (549 meters)

Ground Sample Distance:

Front Line:	0.35 feet/pixel (0.11 meters/pixel)
Middle Line:	0.41 feet/pixel (0.12 meters/pixel)
Back Line:	0.49feet/pixel (0.15 meters/pixel)

Ortho (Nominal 4 Inch)

Footprint:	1,385 x 923 feet (422 x 281 meters)
Ground Sample Distance:	0.35 feet/pixel (0.11 meters/pixel)

Sector Tiles:

One-Meter Sector Tiles

Footprint:	5,280 x 5,280 feet (1,609 x 1,609 meters)
Pixel Size:	3.28 feet/pixel (1.0 meters/pixel)
Source Imagery:	Community Orthogonal (12 and 9 inch) and/or Neighborhood Orthogonal (Premier and Standard)
Radiometry:	Not radiometrically balanced, may have observable cut lines and could consist of imagery taken over a period of several days.
File Size (Approx.):	8,000 KB (TIFF format)

One-Foot Sector Tiles

Footprint:	2,640 x 2,640 feet (805 x 805 meters)
Pixel Size:	1.0 feet/pixel (0.3048 meters/pixel)
Source Imagery:	Community Orthogonal (12 and 9 inch) and/or Neighborhood Orthogonal (Premier and Standard)
Radiometry:	Not radiometrically balanced, may have observable cut lines and could consist of imagery taken over a period of several days.
File Size (Approx.):	20,900 KB (TIFF format)

Six-Inch Quarter Sector Tiles

Footprint:	2,640 x 2,640 feet (805 x 805 meters)
Pixel Size:	0.5 feet/pixel (0.1524 meters/pixel)
Source Imagery:	Premier Neighborhood Orthogonal and/or Neighborhood Orthogonal
Radiometry:	Not radiometrically balanced, may have observable cut lines and could consist of imagery taken over a period of several days.
File Size (Approx.):	83,500 KB (TIFF format)

Custom Ortho-Mosaics:

Pictometry can create custom ortho-mosaics based on the resolution of the imagery captured. If a custom ortho-mosaic is desired, the full specifications will be spelled out in a separate addendum. It is important to note that while the ortho-mosaic can

be created at any pixel resolution, up or down, creating an ortho-mosaic with a pixel size smaller than the ground sample distance of the input imagery will not contain any more information than the resolution of the input imagery. In other words, if you create a six-inch ortho-mosaic from one-foot imagery, even though the pixels will be six-inch, the overall image data resolution will still only be one-foot. For this reason, it is important to ensure the base imagery purchased meets or exceeds the resolution requirements of any ortho-mosaics you need. Under-sampling, for instance creating a one-foot ortho-mosaic from six-inch resolution imagery, is not a problem and generally produces very good results.

Pictometry also has licensed partners who can create an ortho-mosaic product that can be certified to a particular accuracy. In general, ortho-mosaics from Pictometry's neighborhood orthogonal imagery can meet NMAS 1:1200 (1.0-meter RMS error at 95% confidence interval) in relatively flat terrains or areas with good elevation data. For areas with highly variable terrain or areas with poor elevation data, this number generally drops to NMAS 1:2400 (2.0-meter RMS error at 95% confidence interval). Certified ortho-mosaics can be created from Pictometry's community orthogonal imagery, but only under certain capture parameters. As such, it is important to include any custom ortho-mosaic requirement with the image capture requirements such that the community orthogonal imagery can be captured in a way consistent with certification requirements.

General Specifications:

Orthogonal Images

Sensor Size	Pixels: 4008 x 2672 (or 3208 x 2672 for some Community level imagery) in a Landscape orientation.
Image Format	Industry-standard image format with proprietary image trailer, including JFIF (JPEG), TIFF, and BMP.
Image Quality	Images will have an unobstructed view of the ground. In controlled airspace around airports, etc., and in areas of rapid elevation changes, the image footprint sizes and resolutions may vary. There may be varying degrees of ground illumination and color variations due to lighting and cloud shadows.
Measurement Accuracy	<0.5% measurement error, excluding user pixel selection error
Pixel Placement Accuracy	Pictometry provides a visualization system and therefore does not certify image accuracy. However, some Pictometry customers have done their own certification on the Pictometry data after delivery and have shared their results. On average, customers have been seeing better than 1.0-meter RMS error at a 95% confidence level (NMAS 1:1200) for orthogonal imagery over relatively flat terrain or in areas with accurate elevation data, and 2.0-meter RMS error at a 95% confidence level (NMAS 1:2400) for more varied terrain or in areas with poor elevation data. However, Pictometry does not guarantee these accuracies and your results may vary.
Sensor Orientation	Pictometry utilizes an IMU (Inertial Measurement Unit), ground station post-corrected differential GPS, and Kalman filtering to achieve a high degree of positional and directional accuracy.
Sensor Positional Accuracy	mean 15cm absolute
Sensor Directional Accuracy	0.015 degrees absolute (roll/pitch) 0.035 degrees absolute (heading)
Ortho-Rectification	The images are ortho-rectified to back out the optical deviations of the capture system and the variations due to elevation changes (utilizing the best DEM data available, including customer provided DEM data), resulting in geographically square pixels aligned to a rectilinear grid. This grid can be one of any number of coordinate systems, including Latitude/Longitude, State Plane, UTM, and more. The desired coordinate system should be specified in the contract, or a default coordinate system will be used.
Image Export	JFIF (JPEG), TIFF, BMP EFS software can be utilized to export the images into any of the above industry-standard formats. The orthogonal images can optionally be re-projected during this export process, and an associated geography file can be created as well for use in importing the images into GIS mapping software.
Image Tiling	Individual orthogonal images are edge-feathered and mosaiced to produce orthogonal image tiles with tile sizes selected to balance single image coverage as well as manageability of open images.

These orthogonal tiles provide continuous coverage across the area of interest. While some color balancing is done, these orthogonal tiles are not fully radiometrically balanced or edge-matched.

Oblique Images

Sensor Size	Pixels: 4008 x 2672 (or 3208 x 2672 for some Community level imagery) in a Landscape orientation.
Image Format	Industry-standard image format with proprietary image trailer, including JFIF (JPEG), TIFF, and BMP.
Image Quality	Images will have an unobstructed view of the ground. In controlled airspace around airports, etc., and in areas of rapid elevation changes, the image footprint sizes and resolutions may vary. There may be varying degrees of ground illumination and color variations due to lighting and cloud shadows. Due to the nature of oblique aerial photography, there may also be artifacts such as haze and glint and glare caused by reflected sunlight.
Measurement Accuracy	<0.75% measurement error, excluding user pixel selection error
Pixel Placement Accuracy	Pictometry provides a visualization system and therefore does not certify image accuracy. However, some Pictometry customers have done their own certification on the Pictometry data after delivery and have shared their results. On average, customers have been seeing better than 2.0-meter RMS error at a 95% confidence level (NMAS 1:2400) for oblique imagery over relatively flat terrain or in areas with accurate elevation data, and 4.0-meter RMS error at a 95% confidence level (NMAS 1:4800) for more varied terrain or in areas with poor elevation data. However, Pictometry does not guarantee these accuracies and your results may vary.
Sensor Orientation	Pictometry utilizes an IMU (Inertial Measurement Unit), ground station post-corrected differential GPS, and Kalman filtering to achieve a high degree of positional and directional accuracy.
Sensor Positional Accuracy	mean 15cm absolute
Sensor Directional Accuracy	0.015 degrees absolute (roll/pitch) 0.035 degrees absolute (heading)
Image Export	JFIF (JPEG), TIFF, BMP EFS software can be utilized to export the images into any of the above industry-standard formats.

Notes

1. The existing National Map Accuracy Standards focus on conventional analog aerial photography products. When used for digital mapping products, it is necessary to specify the approximate image scale (e.g. 1:1200) when stating NMAS requirements.
2. Pictometry's orthogonal images provide the coordinate accuracy fulfilling most planemetric requirements, however, Pictometry data is not intended for authoritative definitive mapping or surveying replacement. If there is a need for authoritative mapping products, additional work is required by licensed individuals in order to certify Pictometry's orthogonal imagery. Alternatively, a separate, authoritative orthogonal image capture can be done and those orthogonal images used inside of Pictometry. Our oblique images are unique to Pictometry and are intended to provide data not available elsewhere and lateral views with more visual information, such as building stock analysis. In Pictometry the orthogonal and oblique images are linked for your convenience and additional study. With a few clicks you can find the revealing lateral views, height measurements, and other information afforded by the oblique images while using the coordinate accuracy afforded by the orthogonal images.